

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A device for the heating of a liquid in a beverage machine, the device comprising:

~~at least one set of at least two resistors, said resistors are electrically linked together so as to use one resistor of each set individually or in serial with one or more of the resistors of the same set; and~~

at least one individual resistor and at least one set of at least two resistors, said at least one individual and at least one set of at least two resistors are being electrically linked together so as to use the first resistor of a set individually or in serial with one or more of the following resistors of the same set, said resistors transferring the maximum of energy to a flow of liquid in the beverage machine and allowing a finer control of a temperature of the liquid.

Claim 2 (previously presented): A device according to claim 1, wherein the set of at least two resistors and at least one individual resistor are disposed on a tube, the flow of liquid being in said tube.

Claim 3 (previously presented): A device according to claim 2, comprising a cylindrical insert, which is located inside the tube, along the entire length of the tube and substantially along the axis of symmetry of the tube.

Claim 4 (previously presented): A device according to claim 3, wherein the insert comprises helicoidal grooves on an outside surface.

Claim 5 (canceled):

Claim 6 (previously presented): A device according to claim 2, wherein the ratio of the length to the diameter of the tube is between about 5 and about 40.

Claim 7 (previously presented): A device according to claim 3, wherein the insert is comprised of an insulated material, selected from the group consisting of plastic, metal and ceramic.

Claim 8 (previously presented): A device according to claim 3, wherein the insert is fixed.

Claim 9 (previously presented): A device according to claim 3, wherein the insert can be rotated along its axis of symmetry due to a connection of said insert to a rotating wheel of a flowmeter disposed at a lower part of said insert.

Claim 10 (canceled):

Claim 11 (previously presented): A device according to claim 1, wherein the set of at least two resistors is positioned on a flat base, the flow of liquid being through channels, which are positioned along resistor tracks.

Claim 12 (previously presented): A device according to claim 11, wherein the channels for the flow of liquid have a reduced section area, so that the flow of liquid reaches a turbulent flow.

Claim 13 (previously presented): A device according to claim 1, wherein the resistors have a form selected from the group consisting of wires, and thick-film resistors.

Claim 14 (previously presented): A device according to claim 1, wherein all of the electrical resistors have a power density of up to 15 to 70 Watt/cm².

Claim 15 (previously presented): A device according to claim 2, wherein the hollow tube includes enamel painting on an outside portion under the resistors.

Claim 16 (previously presented): A device according to claim 1, wherein the resistors are insulated with an electrically non conductive material.

Claim 17 (currently amended): An apparatus for the heating a liquid, the apparatus comprising:

a liquid supply,

a pump for pumping said liquid to

a device for heating said liquid comprising ~~at least one first set of at least two resistors, said resistors are electrically linked together so as to use one resistor of each first set individually or in serial with one or more of the resistors of the same set,~~ and at least one individual resistor and at least one second set of at least two resistors, said at least one individual and at least one second set of at least two resistors are being electrically linked together so as to use the first resistor of a second set individually or in serial with one or more of the following resistors of the same set, said resistors transferring the maximum of energy to the flow of liquid and allowing a finer control of the liquid temperature, wherein said liquid flows from the water supply through a flow path in said apparatus.

Claim 18 (currently amended): A process for heating a liquid, the process comprising:
~~the steps of~~

passing a liquid through a device comprising ~~at least one first set of at least two resistors, said resistors are electrically linked together so as to use one resistor of each first set individually or in serial with one or more of the resistors of the same set,~~ and at least one individual resistor and at least one second set of at least two resistors, said at least one individual and at least one second set of at least two resistors are being electrically linked together so as to use the first resistor of a second set individually or in serial with one or more of the following resistors of the same set, said resistors transferring the maximum of energy to the flow of liquid;
and

allowing a finer control of the liquid temperature wherein the electricity power in said resistors and/or set of resistors is controlled so as to provide to the liquid the required energy in real-time to reach a liquid target temperature according to the energy balance.

Claim 19 (previously presented): A process according to claim 18, wherein the flow-rate of the liquid is between 50 and 300 ml/min.

Claim 20 (previously presented): A device according to claim 3, wherein the insert can be rotated along its axis of symmetry.

Claim 21 (previously presented): A device according to claim 17, wherein the set of resistors is disposed on a tube, the tube including the flow path.

Claim 22 (previously presented): A device according to claim 21, wherein the apparatus comprises further a cylindrical insert, which is disposed inside the tube, along an entire length of the tube and substantially along an axis of symmetry of the tube.

Claim 23 (previously presented): A process according to claim 18, wherein the flow-rate of the liquid is between 300 and 5000 ml/min.

Claim 24 (previously presented): The process of claim 19, wherein the device is a coffee machine.

Claim 25 (previously presented): The process of claim 23, wherein the device is a vending machine.